

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JOHANN GAUBE and FRANK DOEBERT

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Appeal No. 1998-0548  
Application No. 08/498,845

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ON BRIEF

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Before GARRIS, WARREN and TIMM, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is a decision on an appeal from the final rejection of claims 1 through 6 which are all of the claims in the application.

The subject matter on appeal relates to a process for the continuous preparation of cyclohexene by partial hydrogenation of benzene with hydrogen wherein benzene is introduced in gaseous form and the catalyst is present in solution or suspension in a

liquid, aqueous phase. This appealed subject matter is adequately illustrated by independent claim 1 which reads as follows:

1. A process for the continuous preparation of cyclohexene by partial hydrogenation of benzene with hydrogen in the presence of water and a ruthenium catalyst at elevated temperatures and superatmospheric pressure, wherein benzene is introduced in gaseous form and the resulting cyclohexene is discharged in gaseous form, the catalyst being present in solution or suspension in a liquid, aqueous phase.

The references relied upon by the examiner as evidence of obviousness are:

Mitsui et al. (Mitsui)	4,678,861	Jul. 07, 1987
Don et al. (Don)	EP 0 055 495	Jun. 20, 1984

All of the appealed claims stand rejected under 35 U.S.C. § 103 as being unpatentable over Mitsui in view of Don or Don in view of Mitsui.<sup>1</sup>

We refer to the brief and reply brief and to the answer and supplemental answer for a complete exposition of the opposing viewpoints expressed by the appellants and by the examiner concerning the above noted rejection.

#### OPINION

This rejection will be sustained.

We share the examiner's conclusion that the reference evidence applied in the rejection establishes a *prima facie* case of obviousness within the meaning of 35 U.S.C. §

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<sup>1</sup>The claims on appeal have been grouped together; see the second page of the brief and page 3 of the answer. Accordingly, we will focus upon claim 1, the sole independent claim on appeal, in assessing the propriety of the rejection before us.

103. In particular, we agree with examiner that it would have been obvious for one with ordinary skill in the art to combine the Mitsui and Don teachings in the manner proposed. Notwithstanding the appellants' contrary view, it is our determination that the artisan would have been motivated to so combine these teachings in order to obtain the advantages of conducting the partial hydrogenation reaction under consideration in the presence of water as taught by Mitsui (e.g., see the paragraph bridging columns 4 and 5) and to avoid the drawbacks of liquid-phase hydrogenation in comparison with gas-phase hydrogenation as taught by Don (e.g., see the penultimate paragraph in column 1).

Having determined that the examiner has carried his burden of establishing a *prima facie* case of obviousness, we now proceed to retrace our analysis while giving appropriate consideration to all the evidence of record including the appellants' evidence of nonobviousness. ***In re Rinehart***, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

In this regard, the appellants urge that "the unexpected results of the instant invention rebut any finding of obviousness" (brief, 3rd page ). According to the appellants, these results are shown in figure 1 of their drawing wherein Examples 42

through 44 of Mitsui (represented by circles) are compared with Examples 1a through 1c of the subject specification (adjusted to show integral selectivity and represented by a dotted line).

The examiner considers this showing to be deficient in a number of respects. First, the examiner believes that the showing does not fully represent the Mitsui disclosure because the showing involves only three Examples out of the ninety seven Examples of the Mitsui reference. Additionally, the tested methods in the appellants' showing include parameters not required by the appealed claims or by Mitsui's teaching.

In our view, the examiner's above noted concerns regarding appellants' showing have merit. For example, as correctly indicated by the examiner, the tested methods of the proffered showing include the use of zinc chloride which is not required by either the appellants' claims or by the disclosure of Mitsui. For all we know, when the methods of the appellants and Mitsui are practiced without this component, the results of these respective methods are comparable to one another. Analogous reasoning applies to a number of the other parameters (e.g., temperatures, pressures, times, concentrations) employed in the inventive and comparison methods of the appellants' showing.

In essence, the appellants' showing is deficient because its relatively very narrow

scope fails to adequately represent either the broad scope of appealed claim 1 or the broad scope of Mitsui's disclosure. See, for example ***In re Lindner***, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972) and ***In re Susi***, 440 F.2d 442, 445, 169 USPQ 423, 426 (CCPA 1971). In this regard, the appellants contend that their showing ought not be regarded as deficient because a "process need not produce superior results in every environment in which it is used" (reply brief, second page). However, the examiner's concern regarding this showing (which we share) is unrelated to "superior results in every environment" but instead relates to the scope of this showing relative to the appealed claims and the applied prior art.

Under the foregoing circumstances, it is appropriate to regard the appellants' showing as inadequate to establish that the process of appealed claim 1 produces results which are unexpected relative to the process of Mitsui. Moreover, this determination is reinforced by the fact that the portion of appellants' specification (see pages 4 through 6) which discusses this showing does not characterize it as displaying results which are unexpected. Concerning this matter, we remind the appellants that evidence presented to rebut a *prima facie* case of obviousness must show results which are unexpected and which are commensurate in scope with the claims to which it pertains. ***In re Dill***, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979).

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For the reasons set forth above and in the answers, it is our ultimate determination that the evidence before us, on balance, weighs most heavily in favor of an obviousness conclusion. We shall sustain, therefore, the examiner's § 103 rejection of the appeal claims as being unpatentable over Mitsui in view of Don or Don in view of Mitsui.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED*

BRADLEY R. GARRIS	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
CHARLES F. WARREN	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
	)	
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	)	
CATHERINE TIMM	)	
Administrative Patent Judge	)	

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